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ABSTRACT

Numerous studies suggest that field experiences focus student attention on short-term survival strategies; they do not provide a systematic investigation of alternative theories of learning and instruction. Students attend to management techniques but do not develop a more reflective approach to instruction. If this is so, students at different points of their preservice preparation should exhibit differing abilities to make classroom and/or management decisions when compared with experienced teachers and each other. Three groups of students were the subjects of this study: one group prior to any field experiences, one after experiences but before student teaching, and one after student teaching. A computer simulation of classroom decision-making situations was used to assess the differential effect of preservice field experiences on classroom decision-making. The results of the study generally support the notion that field experiences do provide measurable changes in the decision-making effectiveness of preservice teachers. The groups in the study differed most frequently on resolving a problem with a group of students who could not work together effectively. The students who were without field experience were less successful and took longer to deal with the problem than did their more experienced peers. (JD)

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A COMPARISON OF CLASSROOM DECISION-MAKING STRATEGIES BY THREE GROUPS OF PRESERVICE TEACHERS

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A Comparison of Classroom Decision-Making Strategies
by Three Groups of Preservice Teachers

In recent years many states increased the number of preservice field experience hours required for certification. Teacher educators began to reorient their programs so that

> (F)ield experience typically constitutes the centerpiece of any teacher education program. Early field experiences enable students to get their feet wet and to explore teaching as a profession. Later field experiences increase the students' responsibility for conducting classes and, more generally, help the students assume the full role of a teacher.
> (Posner, Field Experience, pg. ix)

Lanier and Little (1986) in their review of research on teacher education entitle this "the curriculum of field experience." They cite numerous studies that suggest that such experiences focus student attention on short-term survival strategies rather than provide a systematic investigation of alternative psychological theories of learning and instruction. Students attend to management techniques rather than a more reflective approach to instruction. Preservice teachers need to focus on how the students in these classrooms learn, not just how to maintain control. Unfortunately, according to the research cited by these authors, the university courses offered in conjunction with this field work often reinforce this tendency to concentrate on mastery of technique and management rather than encourage a critical analysis of the field experience.

For these reasons and others, several educators question the effectiveness of preservice field experiences as an essential component in the training of effective teachers (Blanton and Moorman, 1985; Feiman-Nemser and Buchmann, 1985; and Griffin et. al., 1983). These researchers and others report that early field experiences may bring about only limited changes in teaching strategies. Additionally, the placement situation may contain

potential pitfalls that can negatively influence the students involved in the field experience. As a result the preservice teachers may learn skills and attitudes that perpetuate the poor teaching behavior they encountered during these experiences. All these researchers call for additional studies to investigate how effective early field experience really is in training teachers.

Clearly, as a result of their field experiences preservice teachers observe and learn many different teacher behaviors. One type of teacher behavior cited by Shavelson (1973, 1983) as central to the task of teaching is how teachers make decisions. He argues that teachers decide to behave (instruct, act) in a particular way using a simplified model of reality that they construct as a result of their experiences and reflections on the teaching process. However, according to Clark and Peterson (1986) and Shulman (1986), the task of describing the precise pathway(s) of this decision-making process is rather complex.

The research presented in this paper leaves open the question of the decision-making process, but seeks to discover if preservice teachers can be differentiated in their ability to make decisions. If early field experiences do cause students to attend to management issues as Lanier and Little (1986) suggest, then students at different points of their preservice preparation should exhibit differing abilities to make classroom and/or management decisions when compared with experienced teachers and eachother. Preservice teachers at three points in their preparation--prior to any field experiences, after field experiences but before student teaching, and after student teaching--would provide the differential field experiences necessary to test this hypothesis.

A question remains prior to testing the hypothesis that differing amounts and types of preservice field experience will result in differing

performances in a decision-making situation. This is the question of the delivery and standardization of the decision-making situation. Hofmeister (1988) and others at Utah State University note that computer programs known as expert systems can be used both to assist a teacher in reaching decisions, for example concerning special education placement, and as a tool in training. Fagal, Kuntz and Harootunian (1988) found that a computer simulated model of a classroom was effective in modifying preservice teachers' decisions concerning time allocation and judgments regarding teacher actions and expected student academic outcomes. In the study reported here, a computer simulation of classroom decision-making situations was used to assess the differential effects of preservice field experience on classroom decision-making.

METHOD

Three different groups of students, students in an introduction to education course (Group T1, n=23), students in an educational psychology course (Group T2, n=16), and students who completed student teaching (Group T3, n=8), served as subjects for this study. Group T1 students completed the decision-making simulations prior to beginning their first supervised field experience. The purpose of this first field experience is to provide students with the opportunity to observe classrooms systematically and to participate as teacher assistant in a regular classroom situation. The focus is on the whole class rather than individuals or groups within the classroom. This field experience is minimally thirty hours in length. Group T2 students completed the decision-making simulation after finishing the introductory field experience as well as two additional field experiences. The first of these latter two preservice field experiences focused on individual and small

group learning, while the second provided the opportunity to teach short, highly focused lessons to larger groups of students. The Group T3 students completed all the aforementioned field experiences as well as a nine-week student teaching prior to completing the decision-making simulations.

The students completed five computer simulations in the School Transactions series designed by Dr. Vincent Lunetta for CONDUIT. The topics for these simulations include harrassing telephone calls, a lab group that was not working effectively, broken/missing equipment, the teaching of a controversial topic, and the request of a student to perform a hazardous science experiment. Each simulation begins with a written description of an initial incident presented on the computer screen. The student is then presented with several potential courses of action to address the problem. Depending upon the student's choice of action, the incident is iterated to respond to the student's choice. This continues until the student either successfully resolves the incident or is judged by the program to be unsuccessful. Usually the situations require two or more decisions and/or choices of action by the student. For example, in the situation where the lab group is not working effectively, students are given four options: ignore the situation, talk to the offending member, talk to the other three members, or split up the group. Depending upon the choice the student makes, the computer would resond with the following incremented situations: the problem would continue, the offending member would become frustrated, the other members would become defensive, or the students refuse to split up. The simulation then offers approximately four more options for each of these situations and the process repeats itself until either a successful solution is found or some other consequence (e.g. poor test scores, resentful group members, or persecuted member) is reached. The students in this study

completed the simulations after participating in a whole class presentation of the process using a different classroom incident.

RESULTS

Students were evaluated on the success or failure of decision-making strategy and by the number of attempts made before reaching a solution. A Chi-square (3 X 2) analysis of each group's success or failure on each of the five decision-making situations revealed only one situation, the lab group that was not working effectively, showing significant (Chi-square = 9.01, $p < 0.05$) results. Only five (of twenty-two) members of the T1 group successfully resolved the situation whereas eleven (of sixteen) and five (of eight) from groups T2 and T3 respectively were successful.

Table 1 provides a listing of the mean number of choices students from each group made for each of the five decision-making situations.

Table 1 here

A series of one-tailed t-tests for all possible comparisons of sample means was used to determine if significant differences were evidenced in the number of choices made in trying to resolve the situation. The author anticipated that the number of choices would be larger for the less experienced group than the more experienced group. Table 2 contains the results of these analyses.

Table 2 here

As might be expected, Group T1 made significantly ($p < 0.005$ and $p < 0.01$ respectively) more choices than did Groups T2 and T3 on the lab group that was not functioning well. Three other significant differences between groups were also evidenced. Groups T1 and T2 made significantly ($p < 0.005$ and $p < 0.05$ respectively) more choices on the harassing phone call situation than did Group T3. Finally, Group T1 made significantly ($p < 0.025$) more attempts before finally resolving the situation of teaching a controversial subject than did Group T2.

DISCUSSION

The results of this study generally support the notion that field experiences do provide measurable changes in the decision-making effectiveness of preservice teachers. The groups in this study differed most frequently on resolving a problem with a group of students who could not work together effectively. The students who were without field experience were less successful and took longer to deal with the problem than did their more experienced peers. Additionally, differences were found between the pre-student teaching field experience group and the post-student teaching group concerning the harassing phone call incident. This type of situation is unlikely to be part of the pre-student teaching field experience of most students whereas there is a much greater likelihood of a similar experience over the longer student teaching internship. Finally, the awareness of how to deal with controversial topics is likely to be learned as part of the field experience of the students.

This study is not without its limitations. The sample sizes were notably small. While significant differences were found, clearly replication with larger samples is warranted. The study was cross-sectional rather than

longitudinal. The growth shown in decision-making prowness may be attributable to maturity rather than the field experiences of the students. The computer simulation used only five classroom/teaching related decision-making situations. These represent only approximately one-quarter of those provided in School Transactions and a tiny fraction of all similar decision-making incidents that regular classroom teachers are called upon to make during a school year. Additionally, with the availability of interactive videodisks, one wonders if these differences among groups would remain or perhaps grow larger. Finally, while the study suggests that differences do exist among the three groups presented here in their success in resolving problems as well as the length of time need to resolve them, the question of the process of decision-making remains unanswered. Nonetheless, the patterns of choice made by the three groups could be analyzed to see if certain common strategies could be found both within groups and/or among individuals across groups. This type of analysis would provide another methodology (along with stimulated recall and reflective narrative/journal) in assessing the decision-making strategies of preservice and experienced teachers.

This study is important because as the demands for accountability in teacher education escalate, these programs need as many means as possible to ensure the probability of success for their graduates. Teacher decision-making is a skill that many researchers (Shavelson and Stern, 1981) report as critical to teacher effectiveness. Indeed, one component of a master teacher's knowledge-base is a set of decision-making strategies that allows her or him to operate efficiently and effectively in her/his classroom. Additionally, one aspect of mentor teacher's role is to share how decisions are reached in the rapid pace of the classroom.

The use of computer technology to evaluate the decision-making behaviors of preservice teachers can be an effective means of quality control for teacher education programs. Students can use these computer simulations as both formative and summative measures to assess their ability to reach effective decisions on classroom problem situations.

TABLE 1

COMPARISON OF MEANS AND STANDARD DEVIATIONS FOR TOTAL NUMBER OF CHOICES FOR EACH GROUP BY EACH PROBLEM SITUATION

		GROUPS					
		T1 (n = varies)		T2 (n = 16)		T3 (n = 8)	
Prob. Sit.		Mean	Std.Dev.	Mean	Std.Dev.	Mean	Std.Dev.
Telephone	(n=23)	5.78	1.953	5.50	2.351	4.44	2.297
Lab group	(n=21)	6.81	3.156	5.65	2.347	5.50	2.671
Broken	(n=17)	1.94	1.144	2.47	1.124	1.75	1.035
Controv.Topic	(n=17)	3.12	1.111	2.35	1.040	2.75	0.886
Experiment	(n=19)	2.58	0.768	2.38	0.498	2.22	0.441

TABLE 2

T-TEST SCORES FOR ALL COMPARISONS AMONG THE THREE GROUPS FOR EACH PROBLEM SITUATION

Prob. Situation	T1 vs T2	T1 vs T3	T2 vs T3
Telephone	ns	2.85****	2.00*
Lab group	2.91****	2.47***	ns
Broken	ns	ns	ns
Controv.Topic	2.13**	ns	ns
Experiment	ns	ns	ns

$p < 0.05$ = *
$p < 0.025$ = **
$p < 0.01$ = ***
$p < 0.005$ = ****

Blanton, W.E. and Moorman, G.B. (1985) Field experiences: Aids or impediments to classroom reading instruction. Reading Research Instruction, 25, 56 - 9.

Clark, C.M. and Peterson, P.L. (1986) Teachers' thought processes. In Handbook of Research on Teaching, 3rd Ed. M. Wittrock (Ed.), New York: Macmillan.

Fagal, Jr. F.F., Kuntz, S.W. and Harootunian, B. (1988) A computer simulated classroom, teacher training, and goals of pre-service teachers. Paper presented at the American Educational Research Association conference, New Orleans.

Feiman-Nemser, S. and Buchmann, M. (1985) Pitfalls of experience in teacher preparation. Teachers College Record, 87, 53 - 65.

Griffin, G. et. al. (1983) Clinical Preservice Teacher Education: Final report of a descriptive study. Austin, TX: University of Texas at Austin.

Hofmeister, A.M. (1988) Expert systems in education: Results and promises. Paper presented at the American Educational Research Association conference, New Orleans.

Lanier, J.E. and Little, J.W. Research on teacher education. (1986) In Handbook of Research on Teaching, 3rd Ed. J. Wittrock (Ed.), New York: Macmillan.

Posner, G.J. (1989) Field Experience, 2nd Ed. New York: Longman.

Shavelson, R.J. (1973) What is the basic teaching skill? Journal of Teacher Education, 24(2), 144 - 151.

Shavelson, R.J. (1983) Review of research on teachers' pedagogical judgments, plans and decisions. Elementary School Journal, 83(4), 392 - 413.

Shavelson, R.J. and Stern, P. (1981) Research on teacher's pedagogical thoughts, judgments, decisions, and behavior. Review of Educational Research, 51, 455 - 498.

Shulman, L.S. (1986) Paradigms and research programs in the study of teaching: A contemporary perspective. In Handbook of Research on Teaching, 3rd Ed. M. Wittrock (Ed.), New York: Macmillan.